

**FACT SHEET FOR NPDES PERMIT WA-000320-4
SOUND REFINING, INC.**

Public Notice Date March 10, 1999

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), and water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see **Appendix A--Public Involvement** of the fact sheet for more detail on the Public Notice procedures).

This fact sheet has been reviewed by the permittee and errors in fact have been corrected. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed the Response to Comments.

GENERAL INFORMATION	
Applicant	Sound Refining , Inc.
Facility Name and Address	2628 Marine View Drive Tacoma WA 98422
Type of Facility:	Petroleum refinery
SIC Code	2911
Discharge Location	Waterbody name: Hylebos Waterway Outfall 002 Latitude: 47°16' 40" N Longitude: 122° 23' 0" W.
	Outfall 003 Latitude: 47°16' 40" N Longitude: 122° 23' 0" W
	Outfall 004 Latitude: 47°16' 40" N Longitude: 122° 23' 0" W
Water Body ID Number	WA-10-0020

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

In early 1998 a newly formed corporation based in Texas purchased the assets of Sound Refining, Inc., located on the Hylebos waterway on the northwest edge of the Tacoma tide flats. The site is 50 acres in size with approximately 25 acres of mudflats within the tide zone and 10 acres not in industrial use. Sound was started in 1967 as a crude oil refinery.

INDUSTRIAL PROCESS

The refinery facilities consist of distillation units, a tank farm, a marine transfer facility, and a wastewater treatment facility. It produces distillate oil and asphaltic residue from heavy Venezuelan crude to supply the Pacific Northwest. Products are distributed in the state of Washington with the exception of bunker fuels that are sold for consumption out of state. The volume of tankage within the facility is 29 million gallons or 690,000 barrels (bbls).

The current production capability at the facility is approximately 8000 barrels per day. During the term of the previous water quality permit (1984 - 1989) production had decreased and was on a seasonal basis. Asphalt production continues to peak in the summer during the construction season. Production has been variable since 1992. In the spring and summer of 1998 Sound has not refined any crude oil to produce asphalt. A major asphalt contract was lost to competition. Sound continues to produce some asphalt using blended stocks. Sound is currently considering purchasing another unit to refine preprocessed used oils to generate a distillate, which would be sold for fuel blending.

YEAR	AVERAGE PRODUCTION BBLs/DAY	AVERAGE PRODUCTION (MAY - OCT) BBLs/DAY
1992	1601	1872
1993	2018	2986
1994	2203	2681
1995	1817	2986
1996	984	1253
1997	1426	2473
1998 (to date)	378	693

The facility is currently permitted for a maximum of 5000 barrels per day. The majority of product (88%) is transferred through the marine facility. The remainder is transferred at the truck loading facilities.

WASTEWATER FACILITY

The first wastewater treatment facility was constructed and began discharging in 1967. It consisted of three oil/water separators and a holding pond. The system was rebuilt in 1976 to include an API separator, a surge pond, a Pielkenroad corrugated plate interceptor (CPI), an equalization tank, an aeration basin, a rotating biological contactor (RBC), a clarifier, and an excelsior filter. In May of 1991 an induced air filtration unit (IAF) was installed to prevent total suspended solids exceedances. The API and CPI separators are used to recover oil that is then recycled through the refining process. The IAF unit removes additional solids and gross oil. Biological treatment follows and consists of an aeration basin and an RBC unit. The wastewater is then clarified and discharged. Prior to December 16, 1995 Sound's treated process wastewater was discharged to the Hylebos waterway. Sound completed construction of a pump station that began discharging treated process wastewater into the City of Tacoma's wastewater collection system. The discharge piping was removed in mid-January of 1996.

STORMWATER BASINS AND DISCHARGE OUTFALLS

Sound Refining, Inc. submitted a stormwater study in September of 1992 that described the stormwater drainage basins and provided monitoring data from the discharges. Monitoring data from that report is included in **Appendix C**. The property can be divided into 9 stormwater drainage basins that are shown in **Appendix D**. The stormwater discharges are designated 002 through 008. Discharge 001 was the main process wastewater outfall and has been disconnected. Outfalls 002 - 004 drain the refinery property and may have industrial impact. Basins 005 - 008 drain administrative parking lots and/or areas that have no industrial activity. The discharge pipes of outfalls 002 - 008 were fabricated with corrugated pipe.

Basin A drains the easternmost portion of the east tank farm to Outfall **002**. The total area drained is 116,400 ft². This basin includes Tanks 26, 27, 28 and 161 and 162. In the past, drums of oil-contaminated soils and residual contaminated asphalt have been stored in this area. They were sealed with plastic lids to keep out the rain while they awaited transport and disposal. The lids were not always observed to be on securely. Sound Refining, Inc. completed construction of a contaminated soils storage area in February of 1997. It consists of a cement pad and walls and a cover. Soils can be removed with a front-end loader. The amount of drums of oily soil wastes being stored in this area should decrease with the new contaminated soil containment pad. The tank farm area drains to a concrete sump. Oil can be trapped in this area. The sump drains to a weir located at the discharge box, which contains an excelsior straw filter and sorbent pads. This discharge is

valved and is left in the closed position. The operator must therefore make a decision to drain this area. A short length of pipe exits the box and discharges to the Hylebos. The pipe is several feet over the surface of the water depending on the tidal height. It is never submerged.

Basin B drains the rest of the eastern tank farm (Tanks 1-5, and 22), a portion of the truck rack, and the area outside the laboratory building. Basin B, covering 112,600 ft², discharges to Outfall **003**. The diked area containing the tanks drains to a concrete lined drainage ditch and collection basin. The collection basin has a weir and is valved. This is drained to a valve box outside of the diked area. The truck racks and the area outside of the lab building drain to a discharge channel which also contains a continuously flowing spring that runs through the refinery facility. This flows through a valve box that was placed upstream of the discharge pipe in order to temporarily stop flow should a spill occur. Because of the spring's continuous flow the amount of time available to contain a spill in this area would be minimal. This valve box discharges to a weir box containing an excelsior straw filter and sorbent pads. The diked area is also connected to this weir box. The box discharges into the Hylebos through a short length of pipe designated as Outfall 003. The discharge pipe is suspended several feet over the Hylebos dependant on tidal level and is never submerged.

The process area drains to the oily water sewer, which discharges to the wastewater treatment facility. The treatment facility discharges to the City of Tacoma wastewater system. This area is not identified as a basin.

Basin C drains the western tank farm, a portion of the truck rack, and the bermed smaller tank areas that lie within the process area. Tanks 7-9, 11-21, 25, 29, 151, 152, and 155 - 157 are located in this area which is approximately 246,000 ft². The larger westernmost tank farm drains to a sump at the southeast corner of the earthen containment basin. This sump is valved to the weir box at Outfall **004**. The smaller tank farm is valved through another line to the same weir box. It goes through a series of sumps and weirs prior to ending up at the final weir box. There is another discharge point from the westernmost tank farm consisting of a sump that is located in the northwest corner of the tank farm. The sump is valved and discharges to Outfall 006. Sound does not use this discharge to drain the tank farm however. The final weir box contains an excelsior straw filter and sorbent pads. A short length of discharge pipe, designated as Outfall 004, exits the weir box which discharges stormwater several feet above the surface of the Hylebos. The pipe is never submerged.

Basin D drains a portion of the road along the western tank farm and an area of non-industrial activity into Outfall **005**.

Basin E consists of the administrative building, a portion of the parking lot and the site access. Trucks enter and leave the site in this area. There is therefore some potential for spillage. This basin discharges into Outfall **006**.

Basin F drains a small shoreline area that includes a portion of parking lot. It discharges into Outfall **007**.

Basins G and H consists mostly of undeveloped area and some parking lot. There is a barn structure that is used for storage. There is also an abandoned private residence owned by Sound Refining, Inc. which is primarily used for storage. The barn area is mostly used for storage of scrap metal. This area has been used to store empty drums, as was observed during the June 1996 RCRA inspection. In the past this area was not patrolled on a frequent basis. As a result of the inspection the area has been included on its weekly RCRA inspection list. There is still some possibility that materials could end up in this location and be a source of discharge. No other industrial activity occurs in this area. The stormwater from both of these basins discharges into Outfall **008**.

Outfalls 002 through 004 are located on the bulkhead and discharge above the water line to the Hylebos. Outfalls 005 - 008 may be submerged depending on the tide level.

EXISTING STORMWATER MANAGEMENT PRACTICES

The weir boxes are checked at each shift (3 times daily) for signs of oil and grease. The weir boxes are cleaned on a monthly basis at which time the excelsior straw bales and sorbent pads are replaced.

The majority of potential pollutant sources such as tank valves and pumps, within the stormwater drainage basins, are contained in some manner. Pumps have curbed containment slabs with sumps which either discharge directly to the process wastewater system or are periodically pumped out to the wastewater system. These containment areas have been upgraded or installed during the past few years. Concrete containment areas have been expanded, added, or modified as necessary to maximize containment. Containment under valves generally consists of a drip bucket or box. Maintenance personnel are required to report and cleanup spills as they occur. Sound's record on these activities has been very poor in the past but has vastly improved in the last few years.

Fertilizers, pesticides and soil conditioners are not used on site. Herbicides are used in a limited fashion in the tank farms. Less than 2 gallons are used on an annual basis. Petroleum products stored on site include crude oil, fuel oil, and asphalt. Other types of products and waste products stored on-site include salts, caustics, paints, and solvents. The facility is manned 24 hours a day.

PERMIT STATUS

The previous permit for this facility was issued on May 15, 1990. The previous permit placed effluent limitations on the process wastewater as tabulated below. The pounds of pollutants were based on an assumed production of less than 5000 bbls/day.

DISCHARGE 001		
PARAMETERS	MONTHLY AVERAGE pounds/day	DAILY MAXIMUM pounds/day
Biochemical Oxygen Demand (5day BOD)	26	49
Chemical Oxygen Demand (COD)	130	254
Total Suspended Solids (TSS)	22	34
Oil & Grease (O&G)	8	15
Phenolic Compounds	.06	.25
Ammonia as N	2.8	6.1
Sulfide	.15	.3
Total Chromium	.15	.3
Hexavalent Chromium	.006	.01
pH	Within the range of 6.0 to 10.0	

A second tier of effluent limits was provided in case production increased above 5000 bbls/day. That production level was never reached.

An additional allocation of pollutants was allowed for stormwater discharges. The pollutants that were given an additional allocation included BOD, COD, TSS, O&G, phenolics and total chromium.

Stormwater outfalls 002 – 004 were required to be visually monitored on a daily basis for the presence of oil and grease.

An application for permit renewal was submitted to the Department on February 2, 1996. Additional information was submitted on April 4, 1996.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The most recent inspection of the facility was a Class I inspection conducted on October 20, 1998. A Class 2 inspection was conducted on February 18, 1997.

During the term of the current and previous permits, the Permittee had frequent problems maintaining compliance with BOD and especially TSS limitations on its process wastewater discharge. The seasonal nature of production has made it difficult in the past to maintain an optimally functioning biological treatment system. Compliance problems resulted in penalty actions and administrative orders in attempts to correct the problems. In June of 1994 a Notice of Violation was issued to Sound Refining, Inc. to respond to repeated violations. Consideration of the chronic compliance problems led to a decision, by the facility, to pursue discharge of pretreated process wastewater to the City of Tacoma. Sound Refining, Inc. now discharges pretreated process wastewater to the Tacoma wastewater system as authorized by a pretreatment permit issued by the City of Tacoma. The stormwater discharges from the facility continue to be regulated by Ecology through the existing NPDES permit.

No violations of the stormwater requirements have been documented by the facility discharge monitoring reports (DMR's) or by Ecology inspections.

The existing NPDES permit required a number of special studies that were completed. They are listed in the following table.

REPORT/PLAN	DUE DATE	SUBMITTAL DATE
S4(e) Solid Waste Disposal Plan	11/15/90	11/14/90
S4(f) Spill Prevention, Control and Countermeasure Plan (SPCC)	11/15/90	11/14/90 5/5/92 11/17/94
S4(f) Dock Operations Manual	11/15/90	
S4(f) Marine Oil Spill Contingency Plan	11/15/90	*
S4(g) Stormwater Runoff Study - Sampling Plan	11/15/90	11/14/90
S4(g) Stormwater Runoff Study	8/15/91	9/8/92
S4(h) Treatment System Operating Plan	11/15/90	11/14/90
S5 (a)(1) Copper and Nickel Study Report	1/15/91	3/26/92
S5 (a)(2) Acute Biomonitoring Study (Effluent)	start date 11/15/90 final submittal by 1/15/92	(see below for a summary of the data submitted)

REPORT/PLAN	DUE DATE	SUBMITTAL DATE
S5 (a)(3) Chronic Biomonitoring Study (Effluent)	start date 5/15/90 final submittal by 7/15/91	(see below for a summary of the data submitted)
S5 (a)(4) Chemical Analysis of Influent & Effluent	9/15/92	5/12/92
S5 (b) Sediment Monitoring - Study Plan	11/15/91	12/2/91
S5 (b)(1) Sediment Monitoring - Acute Biomonitoring	8/5/92	7/22/92
S5 (b)(2) Sediment Monitoring - Chemical Analysis of the Sediment	8/5/92	7/22/92
S5 (b)(3) Sediment Monitoring - Benthic Macroinvertebrate Abundance Study	8/5/92	8/24/92

*The Marine Oil Spill Contingency Plan submittal date was extended to November 1993. The plan was finally approved on November 16, 1994. Chapter 173- 181-080 WAC requires that plans be reviewed every 5 years by Ecology. Ecology's Southwest Regional Office's spill group reviews and approves these plans.

A summary of the biomonitoring data is tabulated below. Sound Refining, Inc. experienced toxicity in both the acute and chronic tests of the process wastewater effluent. The effluent is now discharged to the City of Tacoma where it receives additional treatment at the City's wastewater treatment facility.

ACUTE BIOMONITORING DATA - PROCESS WASTEWATER

SAMPLE DATE	RAINBOW TROUT % Survival in 100% Effluent	FATHEAD MINNOW % Survival in 100% Effluent	DAPHNIA PULEX % Survival in 100% Effluent
9/18/91	100	100	87
10/30/91	90	100	93
12/30/91	0	77	0
1/17/92	100	100	37
1/28/92			30
3/19/92	0	100	47
4/28/92	53	77	47
6/12/92	100	100	73
9/9/92	0	57	97
2/3/93			83
4/19/93	57		
7/28/93			100
12/17/93	100		

CHRONIC BIOMONITORING DATA - PROCESS WASTEWATER

SAMPLE DATE	SHEEPSHEAD MINNOW NOEC % effluent	OYSTER LARVAE NOEC & EFFLUENT	ECHINODERM SPERM NOEC
9/9/92	12.5	6.25	<0.2
5/18/93	25	12.5	<0.2
7/26/93	100	12.5	<0.2
9/27/93	50	12.5	0.4

WASTEWATER CHARACTERIZATION

Stormwater from Outfalls 002 –004 was characterized by Sound Refining, Inc. on January 31, 1995 for the regulated parameters shown in Table 1.

Table 1: Stormwater Characterization

Date: January 31, 1995	DISCHARGE 002		DISCHARGE 003		DISCHARGE 004	
Flow gpd (calculated)	15430		10960		27360	
PARAMETER	Conc. mg/l	Mass in lbs/day	Conc. mg/l	Mass in lbs/day	Conc. mg/l	Mass in lbs/day
Biochemical Oxygen Demand (5day BOD)	2	0.26	3	0.27	2	0.46
Chemical Oxygen Demand (COD)	15.7	2.02	9.8	0.89	19.6	4.47
Total Organic Carbon (TOC)	2.7	0.35	<1	<00.1	1.2	0.27
Total Suspended Solids (TSS)	4	0.51	9	0.82	14	3.19
Ammonia as N	<0.1	<.01	<0.1	<0.01	<0.1	<0.02
Total Organic Nitrogen as N	<1.0	<0.01	<1	<0.1	<0.1	<0.02
Oil & Grease	1.2	0.15	0.9	0.08	1.6	0.37
Iron	290	0.04	970	0.09	1260	0.29
Magnesium	2420	0.31	4200	0.38	1080	0.25
Copper	<10		<10	<0.001		
Zinc	150	.02	80	.007	90	.02

Appendix C includes additional data collected by Sound and by Ecology during class 2 inspections.

Significant Leaks or Spills

DATE	SPILLED TO GROUND/ WATER	VOLUME IN GAL.	TYPE OF MATERIAL SPILLED	SOURCE/CAUSE
8/18/93	G	60	Fuel Oil	Broken mixer shaft
10/8/93	G	100	Diesel	Tank leak
11/3/93	G	20	Fuel Oil	Spout at loading rack
2/25/94	G	5		Hose connection failure
3/23/94	G	400	Asphalt	Improperly aligned transfer
7/20/94	G	25	Asphalt	Truck overloading
7/25/94	G	20	Asphalt	Truck overloading
8/17/94	G	100	Crude Oil	Tank overloaded
8/29/94	G	25	Diesel	Truck broke fuel lines
11/3/94	G	30	Fuel Oil	Hose came off
6/21/95	G	20	Fuel Oil	Truck spill
8/30/95	G	300	Asphalt Blend	Operator error - mixer turned on when tank was full - asphalt boilover
9/25/95	G	80	Bunker Fuel	Tank leak
10/8/95	G	20	Asphalt	Hose leak
11/6/95	G	84	Fuel Oil	Maintenance activity-line leak
2/9/96	G	3	Diesel	Truck ran over a sewer cover while backing up and punctured a fuel tank
5/3/96	G	20	Crude Oil	Water draw pan spillover
7/3/96	G	18	Petroleum Naphtha	Spouting error while loading
7/14/96	G	5	Fuel Oil	Valve leaked
7/17/96	G	300	Used Oil	Truck spill, improperly attached hose
7/24/96	G	75	Asphalt	Loading asphalt at dock
7/31/96	G	6	Asphalt	Loading rack, valve leaked on loading arm
9/18/96	G	1.5	Asphalt	Truck foamed over at rack
10/5/96	G	2.5	Asphalt	Truck foamed over at rack
1/13/97	W	5	Diesel	Dock, barge operator over filled a fuel tank while loading
3/10/97	G	10	Fuel Oil	Oil leaked by valve at loading rack
8/18/97	G	60	Crude Oil	Bleeder valve failure loading material to a truck near Tank 6
12/18/97	G	462	Soft asphalt	Packing failure of seal on mixer shaft
4/25/98	G	50	Asphalt	Pipe nipple cracked on recirculating pump

Significant leaks and spills have decreased over the term of the previous permit. Sound Refining Company has improved housekeeping procedures over that period. They also prepared a Facility Contingency Plan, which is discussed later in the fact sheet. The proposed permit includes specific BMPs and requires the permittee to prepare a Pollution Prevention Plan (PPP). BMPs and the PPP should also help to prevent further spills from occurring.

PROPOSED PERMIT LIMITATIONS AND CONDITIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific wastewater. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC) or Sediment Quality Standards (Chapter 173-204 WAC). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Guidelines for petroleum refining point sources were published August 12, 1985 under 40 CFR Part 419 by the Environmental Protection Agency (EPA) for the topping subcategory of petroleum refining. These limitations are based on terms of a settlement agreement dated April 17, 1984, between EPA and the Natural Resources Defense Council resolving litigation about the EPA guidelines. The August 12, 1985 guidelines establish Best Available Technology (BAT) and Best Conventional Technology (BCT) as equal to Best Practicable Technology (BPT) for all parameters except phenols and chromium. Phenols and chromium are regulated by whichever guideline is more stringent. All known, available, and reasonable methods to control toxicants in the applicant's wastewater shall be used.

Sound's process wastewaters are currently regulated by the City of Tacoma's pretreatment program. Discharge standards are based on 40 CFR Part 419.15 , "Pretreatment Standards for Existing Sources".

The discharges from Outfalls 002, 003 and 004 are not commingled or treated with process wastewater. Discharges 002, 003 and 004 however could potentially consist of contaminated runoff and are limited as discussed in the following. Effluent limitations for contaminated runoff are included in 40 CFR Part 419. If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) and 15 mg/l oil and grease (O&G) based upon an analysis of any single grab or composite sample. If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l O&G or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants shall not exceed the effluent limitations as tabulated below. The following tabulates those effluent limitations.

	DAILY MAXIMUM		MONTHLY AVERAGE	
	pounds per 1000 gal	mg/l	pounds per 1000 gal	mg/l
Biochemical Oxygen Demand (5day BOD)	0.40	48	0.22	26
Total Suspended Solids (TSS)	0.28	33	0.18	21
Chemical Oxygen Demand (COD)	3	360	1.5	180
Oil & Grease	0.13	15	0.067	8
Phenolic Compounds	0.0029	0.35	0.0014	0.17
Total chromium	0.0050	0.60	0.0018	0.21
Hexavalent Chromium	0.00052	0.062	0.00023	0.028
pH	within the range of 6.0 to 9.0			

The results of the stormwater study conducted by Sound Refining, as a result of conditions in the existing permit, indicate that the discharge is within the above listed effluent limitations. The Class 2 wastewater inspection data confirms this information. The available data, as shown in **Appendix C**, also indicate that the stormwater discharges do not exceed 15 mg/l O&G or 110 mg/l TOC and therefore may be discharged without including effluent limitations as established by federal effluent guidelines.

Ecology's guidance for petroleum handling facilities indicates that oil/water separators should be considered to be AKART. The technology-based limits for oil/water separators are 10 mg/l as a monthly average and 15 mg/l as a daily maximum. Sound Refining does not have oil/water separators in place for these stormwater outfalls, however, the data indicates that they can meet those limits with the facilities and the current best management practices in place. The proposed permit requires Sound to periodically monitor stormwater to ensure that the discharge remains within these limitations. If the facility has difficulty meeting limits, consideration will be given to requiring an engineering analysis to come into compliance.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

A mixing zone has been established for each stormwater discharge (Outfalls 002, 003, and 004) in the NPDES permit. Each mixing zone shall extend from the discharge port in a horizontal direction of no greater than 200 feet plus the depth of water at the discharge port as measured during mean lower low water but shall not occupy greater than 25% of the width of the water body as measured during mean lower low water.

Continued monitoring of toxics will provide a database to set limits when guidance or a regulation for stormwater is available. If the data collected indicate a potential problem a mixing study may be required to determine the actual mixing available.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to marine water in the Hylebos waterway in Commencement Bay, which is designated as a Class B receiving water in the vicinity of the outfall. The area is heavily industrialized. Other nearby point source outfalls include several log sort yards, General Metals, a woodworking facility, City of Tacoma stormwater outfalls, and a marina. Water quality of this class shall meet or exceed the requirements for most uses. Characteristic uses include the following:

water supply (industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; secondary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

The Hylebos waterway is included on the 1998 draft EPA 303(d) list for exceeding 28 organic compound sediment standards and 7 metal sediment standards. Elevated metal levels were found in surface water and sediments in an older Ecology study completed in 1985. Sediment cleanup actions are discussed further below.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	100 colonies/100 ml maximum geometric mean
Dissolved Oxygen	Greater than 5 mg/L minimum
Temperature	19 degrees Celsius maximum
pH	7.0 to 8.5 standard units
Turbidity	less than 10 NTU above background
Toxics	No toxics in toxic amounts

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

pH--There is little data available for pH of the stormwater discharge. Monitoring for pH will be required in the permit.

Turbidity--There is no turbidity data available for the effluent. The fairly limited total suspended solids (TSS) data show relatively low values. Low TSS values generally correspond to low turbidity values. Monitoring the TSS in the stormwater effluent will be required by this permit to establish sufficient data to evaluate.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: copper, lead, nickel and zinc. Because there is very limited data available to make an analysis and because a dilution ratio has not been established for these discharges a reasonable potential analysis will not produce rational results. Monitoring of these and several other metal parameters will be required in this permit to establish a baseline to make an analysis.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected to be present in Sound Refining's stormwater discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in the stormwater.

HUMAN HEALTH

The Department has determined that the applicant's discharge does not contain metal chemicals of concern based at levels that would exceed human health criteria. This is based on relatively limited data. Metals monitoring will be required in the permit for a future analysis. Organic parameters regulated for human health are unlikely to be present in the stormwater runoff. Some monitoring for human health parameters will be included in the permit to verify that they are not present.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

In order to evaluate the sediments near the discharge, the previous NPDES permit required Sound Refining to submit a sediment study plan and study. Sound Refining conducted a sediment monitoring study as approved by Ecology and submitted the results on July 22, 1992.

Another sediment study was completed on the Hylebos as part of contaminated sites cleanup work. A consent decree was signed November 29, 1993 which defined the activities required for the remedial design process and the contaminated sediments cleanup evaluation of the Hylebos Waterway. The Hylebos cleanup investigation work is ongoing and is being conducted by a consortium of liable parties overseen by the EPA. Cleanup work is expected to begin in early 2001. Most ongoing upland sources are controlled. Members of the cleanup committee include: ASARCO, Inc.; Elf Atochem North America, Inc.; General Metals of Tacoma, Inc.; Kaiser Aluminum & Chemical Corporation; and the Port of Tacoma. As part of those activities a report entitled *Hylebos Waterway Pre-Remedial Design Program - Event 1A and 1B Data Report* was finalized June 1996 by the Hylebos cleanup committee. The report includes sediment data from the vicinity of Sound's discharges.

Appendix E includes data and locational maps from those studies.

The data indicate that there is some historical contamination in the underlying sediments. However recent depositions are generally in compliance with sediment standards. The process wastewater discharge no longer discharges to the Hylebos and is therefore no longer a source of contamination. Currently Sound Refining only discharges stormwater from several stormwater outfalls. There has been no indication that Sound's stormwater includes pollutants in sufficient quantities to impact the sediments.

Ecology's Permit Writer's Manual includes a sediment review analysis developed by Ecology's Sediments Management Unit. The analysis is more applicable to conventional dischargers with higher suspended solids. When the suspended solids are very low the results are skewed. This in addition to using the detection level for non-detect metals skews the results of the analysis leading to an invalid conclusion. Periodic monitoring will ensure that the levels of metals in the stormwater remain low.

The stormwater data indicate that the suspended solids for the discharges for which metals data was available ranged from less than 1 to 14 mg/l. The overall TSS data for stormwater ranges from 0 to 50 mg/l. The average values are indicated in the table below.

	OUTFALL						
	002	003	004	005	006	007	008
AVERAGE TSS mg/l	6	4	4.5	10	7	21	13
NUMBER OF SAMPLES	11	17	17	1	10	5	7

Outfalls 002 through 004 are considered industrial stormwater discharges. The other discharges convey parking lots, administrative or other non-industrial sources.

Historical contamination is being reviewed under the current cleanup activities.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

In 1988 an environmental assessment was completed at the Sound facility by the consultant firm Hart Crowser prior to a potential sale of the refinery. The report concluded that the site has some low-level contamination of the upper aquifer and does

not have a universal facility contamination problem. There may be a localized “hot spot” underneath one tank but without further hydrogeologic investigations a definitive answer is not available.

This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water. BMPs will be established to minimize leaks and spills, which are the biggest potential source, to prevent any further contamination of groundwater.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED MAY 15, 1990

Parameter	1990 Permit Limits	Proposed Limits
Oil & Grease	none visible	10 mg/L average monthly 15 mg/L maximum daily
pH		Within the range of 6.0 to 9.0

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring for metal and some conventional parameters is being required to further characterize the effluent. These pollutants could have a significant impact on the quality of the surface water.

The monitoring and testing schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*.

SPILL NOTIFICATION

To ensure proper notification in the event of a spill a requirement is included in the proposed permit for the Permittee to prepare and submit a description of the reporting system. The Permittee will be required to report spills according to the submitted reporting system.

OTHER PERMIT CONDITIONS

SOLID WASTE HANDLING

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste.

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee handles and disposes of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

POLLUTION PREVENTION PLAN

In previous NPDES permits and under other Ecology initiatives Sound Refining Company was required to prepare a variety of spill plans and a solid waste plan. A Marine Oil Spill Contingency Plan was approved by Ecology on November 16, 1994. Ecology's Southwest Regional Office's spill group reviews and approves this plan for Sound Refining Company. These documents focus on specific sources of potential pollution and specific pollutant parameters. This permit includes a requirement that directs the Permittee to specifically review and evaluate facility processes and activities for source reduction and control of water pollutants.

Ecology's goals and objectives for developing and implementing pollution prevention plans are to identify, reduce, eliminate, and prevent the generation and release of pollutants to stormwater, and/or waters of the state and to prevent violations of surface water, ground water, and sediment quality standards. The identification, evaluation, and selection of pollution prevention opportunities will be documented in the plan submitted to Ecology.

The plan should comprehensively address all sources of pollutants that could potentially be released to stormwater and/or waters of the state. Previous requirements have focused on specific types of sources (e.g., solid waste handling), pathways to the environment (e.g., stormwater), or prevention/control measures (e.g., BMPs). These specific requirements are discussed in more detail in the following paragraphs. While the pollution prevention plan is not limited to these specific areas, it should address them using existing guidance. The Permittee will be expected to apply the methodologies from existing guidance to cover other sources, pathways, or measures not covered within the strict scope of that guidance.

The pollution prevention plan requirements include the identification and implementation of Best Management Practices (BMPs). Pursuant to RCW 90.48 and Sections 302 and 402 of the Clean Water Act, BMPs may be incorporated as permit conditions. BMPs are actions or procedures to prevent or minimize the potential for the release of pollutants or hazardous substances in significant quantities to surface water and

groundwater. BMPs, though normally qualitative, are most effective when used in conjunction with numerical effluent limits in NPDES permits. General BMPs are included in the permit and must be complied with. These general BMPs must be included either verbatim or in an Ecology approved modified form in the Pollution Prevention Plan. The Ecology reviewed and approved specific facility BMPs will replace or amend the general BMPs and become an enforceable part of the NPDES permit.

The plan requirements address stormwater pollution prevention. Ecology has developed guidance for the prevention of stormwater runoff contamination, entitled *Stormwater Pollution Prevention Planning for Industrial Facilities* (September 1993). Where other facility plans (such as the SPCC Plan or Oil Spill Prevention Plan) already address the prevention of stormwater runoff contamination, the pollution prevention plan may incorporate the appropriate sections of those plans. These plans, however, will not be all inclusive of the BMPs necessary for prevention of stormwater pollution by more conventional pollutants -- in particular, total suspended solids. They will also not address "clean" areas of the facility, that is those areas where petroleum products or hazardous materials are not stored or used. These "clean" areas contribute conventional pollutants to the facility's stormwater.

The pollution prevention plan requires a review of solid waste handling and disposal procedures to prevent solid waste and solid waste leachate from causing pollution of state waters. In addition, the plan will include a description of measures already taken to prevent the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

Periodic updates of the plan will be required by the NPDES permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

- 1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
- 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
- 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
- 1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

APPENDICES

- A PUBLIC INVOLVEMENT**
- B GLOSSARY**
- C STORMWATER MONITORING DATA**
- D STORMWATER DRAINAGE BASINS**
- E SEDIMENT DATA**

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations that are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on **March 10, 1999** in the Tacoma News Tribune to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the office listed below. Written comments should be mailed to:

**Nancy Kmet
Permit Manager
Department of Ecology
Industrial Section
PO Box 47706
Olympia Washington 98504-7706**

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

For more information or if you have special accommodation needs, please contact Arlene Army at **(360) 407-6930**, or at **aarm461@ecy.wa.gov** or by writing to the address listed above. If you have specific questions regarding the permit and/or fact sheet contact Nancy Kmet at **(360) 407-6941**.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Class 1 Inspection--A walk-through inspection of a facility that includes a visual inspection and some examination of facility records. It may also include a review of the facility's record of environmental compliance.

Class 2 Inspection--A walk-through inspection of a facility that includes the elements of a Class 1 Inspection plus sampling and testing of wastewaters. It may also include a review of the facility's record of environmental compliance.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low; thus, its ability to dilute effluent is reduced.

Daily Maximum Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

Monthly Average --The average of the measured values obtained over a calendar month's time.

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C –STORMWATER MONITORING DATA

APPENDIX D – STORMWATER DRAINAGE BASINS

APPENDIX E – SEDIMENT DATA